

Application Number 10/540659
 Response to the Office Action dated August 8, 2008

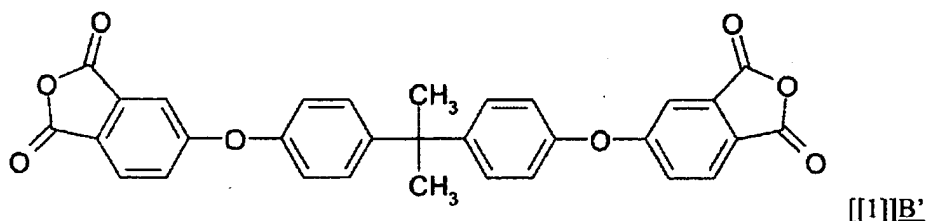
Amendments to the Specification:

This listing of the paragraphs of the specification will replace all prior versions of the corresponding paragraphs of the specification in the application.

Listing of Amended Paragraphs of the Specification:

Please amend the paragraph beginning on page 6, line 30 to read as follows:

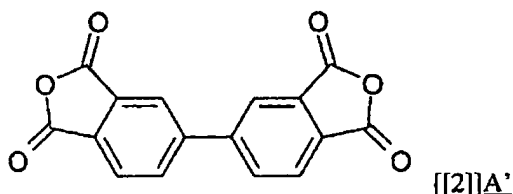
2,2-bis(3,4-dicarboxyphenyl)hexafluoropropane dianhydride, diphenylsulfone tetracarboxylic dianhydride, 2,2-bis(3,4-dicarboxy phenyl)propane dianhydride, diphenylsulfide tetracarboxylic dianhydride, diphenylsulfoxide tetracarboxylic dianhydride, oxydiphthalic dianhydride, biphenyl tetracarboxylic dianhydride and benzophenone tetracarboxylic dianhydride ~~dianhydride~~ dianhydride are examples of aromatic tetracarboxylic dianhydride. In a favorable embodiment, X is a fluorine substituted aliphatic hydrocarbon group. In a more favorable embodiment, the aromatic tetracarboxylic dianhydride monomer compound of the present invention is 2,2-bis[3,4-(dicarboxyphenoxy)phenyl] propane dianhydride (BPADA) of Formula [[1]]B' below.



Please amend the paragraph beginning on page 7, line 11 to read as follows:

In another more favorable embodiment, X is a direct bond, and the aromatic tetracarboxylic dianhydride monomer component is 3,3',4,4'-biphenyl tetracarboxylic dianhydride of Formula[[2]]A' below, that is to say, BPDA.

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Please amend the paragraph beginning on page 9, line 2 to read as follows:

Furthermore, if the compound shown in chemical formula A is biphenyl tetracarboxylic dianhydride (BPDA, chemical formula [[1]]A'), then it is preferable that the mixing ratio of BPADA (chemical formula [[2]]B') shown in chemical formula B is in the range of BPDA : BPADA = 9:1 to 5:5. If in this range, then it is possible to increase the toughness while maintaining high transparency.

Please amend the paragraph beginning on page 9, line 8 to read as follows:

There is a tendency towards increasing costs when alternate functional groups are inserted onto the aromatic tetracarboxylic dianhydride. In particular, when fluorine is inserted, the manufacturing cost increases significantly. For this reason, the 3,3',4,4'-biphenyl tetracarboxylic dianhydride (BPDA) shown in chemical formula [[2]]A' is preferred.

Please amend the paragraph beginning on page 15, line 6 to read as follows:

An agitator on which a polytetrafluoroethylene agitating impeller is attached, and a nitrogen gas insertion pipe were attached to a 500 ml three-necked flask to make a polymerization vessel, and all reactions were performed under a nitrogen atmosphere. 33.565 g (0.135 mol) of 4,4'-diaminodiphenylsulfone (44DDS) that is sold by Wakayama Seika Kogyo Co. Ltd. under the trade name "Seika Cure S" was dosed as a diamine component with 216.0 g of N,N-dimethylacetamide (DMAC) that is sold by Mitsubishi Gas Chemical Corporation as a polymerization solvent, such that the solids portion in the

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polyimide precursor liquid was 28%. After the 44DDS was completely dissolved in the DMAC, 28.69 g (0.0976 mol) of 3,3',4,4'-biphenyl tetracarboxylic dianhydride (BPDA) that is sold by Mitsubishi Chemical Corporation under the trade name "BPDA), and 21.747 g (0.0418 mol) of 2,2-bis[3,4-(dicarboxyphenoxy)phenyl]propane dianhydride (BPADA) that is sold under the trade name "BPADA" by the Shanghai City Synthetic Resin Research Institute were dosed as-is as a solid over 5 minutes as bifunctional acid anhydrides at a molar ratio that is 1.03 times the diamine component. After reacting for 1 hour at room temperature and reacting for 12 hours at 40°C, a viscous polyimide precursor liquid having a viscosity of 205 poise was obtained. Next, 36.0 g of propylene carbonate made by Huntsman LLC was dosed such that when the solids percentage of the polyimide precursor liquid was 100 mass parts, cyclic compounds made up 43 mass parts. As shown in FIG. 1, the "BPADA" has a melting point endothermic peak temperature at 189.96°C as measured by a differential scanning calorimeter (DSC), and is substantially neither endothermic nor exothermic below the melting point onset endothermic temperature (187.26°C). This means that impurities that have a detrimental effect on transparency in the low temperature region are exceedingly scarce or are non-existent.

Please amend the paragraph beginning on page 20, line 11 to read as follows:

4-4 DDS that is the para-form of the above-noted Chemical Formula [[1]]3: 4,4'-diaminodiphenyl sulfone, sold under the trade name "Seika cure S" by Wakayama Seika Kogyo Co. Ltd., was used as the aromatic diamine.

Please amend the paragraph beginning on page 20, line 19 to read as follows:

BPDA of the above-noted Chemical Formula [[A]]A': 3,3',4,4'-biphenyl tetracarboxylic dianhydride monomer, sold under the trade name "BPDA" by Mitsubishi Chemical Corporation, and 2,2-bis[3,4-(dicarboxyphenoxy)phenyl]propane dianhydride (BPADA), of the above-noted Chemical Formula [[B]]B': sold under the trade name

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"BPADA" by the Shanghai City Synthetic Resin Research Institute were used as bifunctional acid anhydrides.